

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS
Significant Permit Modification

Aladdin Manufacturing Corporation
Rockbridge County, Virginia
Permit No. VRO80269
Effective Date: June 7, 2012
Expiration Date: June 6, 2017

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Aladdin Manufacturing Corporation has applied for a Title V Operating Permit for its Glasgow, Virginia facility. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact: DRAFT Date: _____
Jeremy W. Funkhouser
(540)-574-7820

Air Permit Manager: DRAFT Date: _____
Janardan R. Pandey, P.E.

REQUESTED MODIFICATION

On June 2, 2016, the Valley Regional Office received a permitting request from Aladdin Manufacturing Corporation, dated May 31, 2016, with amended information date June 9, 2016 and received June 10, 2016, for a significant permit modification to the facility's Title V operating permit.

Mohawk requested the following changes to the Title V permit:

- **Equipment Shutdown: Yarn Dye Lines** – The facility shutdown the following yarn dye line equipment: #1 Ilma Line, #2 Ilma Line, and the Ilma Sample Line which includes the Lanly Dryer, and the Pack Kettles (total of 8). The

All conditions related to the shutdown equipment have been removed from the permit.

- **Equipment Shutdown: Carpet Backing Lines** – The facility shutdown the following carpet backing equipment: Hot Melt Sample Line (HMS) and the Pre Coat Roller Coater Station (TE1-RC). The Extruded Coat Carpet Backing Line (EC) is covered under a minor NSR permit dated 3/27/06.

All conditions related to the shutdown equipment have been removed from the permit.

- **Minor New Source Review Changes: Tile Extrusion Line** – The facility requested the inclusion of changes to the significant amendment to the minor New Source Review (NSR) permit for the Tile Extrusion Line. The significant amendment to the minor NSR permit was issued on August 4, 2016. A detailed description of the limitations, monitoring, recordkeeping, and testing conditions from the minor NSR permit for the Tile Extrusion Line are provided below.

In addition to the description of changes listed above, the format of the Title V permit was updated to reflect changes made to the Title V boilerplate since the issuance of the January 30, 2014 Significant Modification to the Title V permit.

REASON FOR MODIFICATION

The facility has requested a significant modification to the current Title V operating permit, with an effective date of June 7, 2012 and an expiration date of June 6, 2017, and a significant modification date of January 30, 2014. This modification will include the incorporation of the revisions to the applicable NSR permits as described above.

APPLICABILITY OF 9 VAC 5-80-230

According to 9 VAC 5-80-230, significant modification procedures must be used for those permit modifications that do not qualify as minor permit modifications under 9 VAC 5-80-210 or as administrative amendments under 9 VAC 5-80-200. The modification proposal to the Mohawk Title V operating permit does not meet the specifications for an administrative

amendment or a minor permit modification. The Regulations further list criteria, any of which, if met, require use of significant modification procedures. The changes proposed by the facility meet the following criterion, as stated in 9 VAC 5-80-230.A.1:

Significant modification procedures shall be used for those permit modifications that involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit...

The Title V permit modifications require the establishment of emission limitations, standards, and monitoring through the incorporation of the new and modified applicable requirements in the NSR permits.

A significant amendment for the Tile Extrusion Line (TE1) was issued on August 4, 2016; this permit supersedes the permit dated April 28, 2006. The Title V modification incorporates the changes to the NSR permit into the Title V permit.

Since the changes proposed by the facility meet at least one criterion listed in 9 VAC 5-80-230 and do not qualify as an administrative amendment or minor permit modification, the changes must be processed as a significant permit modification.

CHANGES TO TITLE V OPERATING PERMIT

The following changes have been made to the Title V Operating Permit.

Facility Information

The name of the facility was changed from Mohawk Industries, Inc. to Aladdin Manufacturing Corporation.

There are no other changes to this section of the permit.

Emission Units

The Emission Units table was updated to indicate changes in the emission units and applicable permits for the facility.

Fuel Burning Equipment:

There are no changes to the fuel burning equipment.

Yarn Dye Lines:

The following equipment was removed from the Yarn Dye Lines: #1 Ilma Line, #2 Ilma Line, and the Ilma Sample Line which includes the Lanly Dryer, and the Pack Kettles (total of 8).

There are no other changes to this section of the permit.

Carpet Backing Lines:

The following equipment was removed from the Carpet Backing Lines: Hot Melt Sample Line (HMS) and the Pre Coat Roller Coater Station (TE1-RC).

The NSR permit dates for the Tile Extrusion Line (TE1) was changed to reflect the recent minor NSR amendment.

There are no other changes to this section of the permit.

Fuel Burning Equipment

There are no changes to the Fuel Burning Equipment section of the Title V permit.

The complete requirements of 40 CFR 63, Subpart JJJJJJ – National Emissions Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers are not addressed in the Title V significant modification. The applicable requirements of 40 CFR 63, Subpart JJJJJJ are to be included in the Title V permit upon renewal.

Yarn Dye Lines

The facility has shutdown the following equipment:

#1 Ilma Line, #2 Ilma Line, and the Ilma Sample Line which includes the Lanly Dryer, and the Pack Kettles (total of 8).

The facility entered into a mutual shutdown determination for the listed equipment on April 28, 2015. All references and conditions associated with the equipment have been removed from the permit.

There are no other changes to this section of the permit.

Carpet Backing Lines Conditions

The facility has shutdown the following equipment:

Hot Melt Sample Line (HMS) and the Pre Coat Roller Coater Station (TE1-RC).

The facility entered into a mutual shutdown determination for the Hot Melt Sample Line (HMS) on April 28, 2015. The facility entered into a mutual shutdown determination for the Pre-Coat Roller Coater Station (TE1-RC) on August 4, 2016. All references and conditions associated with the equipment have been removed from the permit.

In addition to the shutdown equipment listed above, the requirements from the significant amendment to the minor NSR permit for the Tile Extrusion Line were included in the Title V Permit.

Limitations

The following limitations and/or other applicable requirements are from the minor NSR

permit dated April 28, 2006, as amended August 4, 2016. Please note that the condition numbers are from the minor NSR permit dated April 28, 2006, as amended August 4, 2016; a copy of the permit is enclosed as Attachment B.

- Condition 1: The condition establishes that particulate emissions from each tile line extruder pellet receiver tank (TE1-RTD1 – TE1-RTD4), each tile line extruder pellet feed hopper (TE1-HOP1 and TE1-HOP2), each pellet storage silo (Pellet 4 – Pellet 6) and each trial pellet receiver tank (TE1-T1 and TE1-T2) shall be controlled by a fabric filter.
- Condition 2: Fugitive particulate emissions from the handling and transfer of pre-blended pellets shall be controlled by enclosure.
- Condition 4: The condition establishes the throughput of pre-blended pellets for the tile line extruders (TE1-MC).
- Condition 5: The condition establishes the VOC emission limitations for the tile line extruders (TE1-MC).
- Condition 6: The condition establishes the visible emission limitation for each tile line extruder pellet receiver tank (TE1-RTD1 – TE1-RTD4), each tile line extruder pellet feed hopper (TE1-HOP1 and TE1-HOP2), each pellet storage silo (Pellet 4 – Pellet 6) and each trial pellet receiver tank (TE1-T1 and TE1-T2).
- Condition 7: The condition establishes the visible emission limitation for the tile line extruder stack (TE1-MC).
- Condition 8: The condition establishes the visible emission limitation for the handling and transfer of pre-blended pellets.
- Condition 16: The condition establishes general requirements in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices and process equipment which affect such emissions.

Monitoring

The following monitoring requirements are from the minor NSR permit dated April 28, 2006, as amended August 4, 2016. Please note that the condition numbers are from the minor NSR permit dated April 28, 2006, as amended August 4, 2016; a copy of the permit is enclosed as Attachment A.

- Condition 3: The condition requires that each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter, and establishes the monitoring frequency.

In addition to the monitoring requirements from the minor NSR permit, the following monitoring requirements are established in the Title V permit. Please note that the condition numbers below refer to the Title V permit conditions.

Condition 31: The condition establishes the equation used to determine compliance with the annual VOC emission limitations for the Tile Line Extruders (TE1-MC).

Condition 32: The condition establishes the monitoring requirements and schedule for visible emissions inspections for each of the pellet silos (Pellet 4 through 6).

The requirement for a device to continuously measure the differential pressure drop across the fabric filter establishes a means of demonstrating proper operation of each fabric filter. The calculations established in the Title V permit, in addition to the recordkeeping discussed below, establish a means of demonstrating compliance with emission limitations for the tile line extruders (TE1-MC). In addition, the visible emissions inspections establish means of demonstrating compliance with visible emission limitations. Additional testing requirements are discussed below.

Recordkeeping

The following recordkeeping requirements are from the minor NSR permit dated April 28, 2006, as amended August 4, 2016. Please note that the condition numbers are from the minor NSR permit dated April 28, 2006, as amended August 4, 2016; a copy of the permit is enclosed as Attachment A.

Condition 11: The condition establishes the following recordkeeping requirements:

- Annual throughput of pre-blended pellets (in tons) for the tile line extruders (TE1-MC), calculated monthly as the sum of each consecutive 12-month period.
- Annual VOC emissions (in tons) from the tile line extruders (TE1-MC), calculated monthly as the sum of each consecutive 12-month period.
- Globally Harmonized System Safety Data Sheets, Material Safety Data Sheets (MSDS), Certified Product Data Sheets, or other vendor information showing VOC content, HAP content, water content and solids content for each component of the pre-blended pellets used.
- Results of all visible emissions evaluations.
- Scheduled and unscheduled maintenance, and operator training.
- Air pollution control equipment maintenance and training provided.

- Operation and control device monitoring records for the differential pressure drop gauge.

In addition to the recordkeeping requirements from the minor NSR permit, the following general recordkeeping requirements are included in the Title V permit for the Tile Extrusion Line. Condition numbers below refer to the Title V permit.

Condition 39: The following recordkeeping requirements are established; these recordkeeping requirements are streamlined with the requirements of Condition 11 from the minor NSR permit:

- Inspection records.
- Operation and control device monitoring records for the differential pressure drop gauge.

The recordkeeping requirements described above provide a means of demonstrating compliance with the throughput and operational limitations, as well as the numerical emission limitations.

Testing

The following testing requirements are from the minor NSR permit dated April 28, 2006, as amended August 4, 2016. Please note that the condition numbers are from the minor NSR permit dated April 28, 2006, as amended August 4, 2016; a copy of the permit is enclosed as Attachment A.

Condition 10: The permitted facility shall be constructed so as to allow for emissions testing and monitoring upon reasonable notice at any time, using appropriate methods. Sampling ports, safe sampling platforms, and access at the appropriate locations shall be provided when requested.

In addition to the recordkeeping requirements from the minor NSR permit, the following general testing requirement is included in the Title V permit for the Tile Extrusion Line. The condition number below refers to the Title V permit:

Condition 41: If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.

There are no other changes to this section of the permit.

Facility Wide Hazardous Air Pollutant Conditions: Printing, Coating, and Dyeing of Fabrics and Other Textiles

The following equipment was removed from this section of the Title V permit: Hot Melt Mix Tanks (HMM); Remote Hot Melt Mix Tank (RHMM); and the Hot Melt Extruder (HM1-

MC).

References to the Tile Line Extruders (TE1-MC) were updated to reflect the current emission unit reference number.

There are no changes to this section of the permit.

Facility Wide Conditions

There are no changes to this section of the permit.

Insignificant Emission Units

There are no changes to this section of the permit.

Permit Shield and Inapplicable Requirements

The provisions of 40 CFR Part 98 – Mandatory Greenhouse Gas Reporting require owners and operators of general stationary fuel combustion sources that emit 25,000 metric tons CO_{2e} or more per year in combined emissions from such units, to report greenhouse gas (GHG) emissions, annually. The definition of “applicable requirement” in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program.

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after January 1, 2011. The current state minor NSR and PSD permits for Mohawk Industries contains no GHG-specific applicable requirements and there have been no modifications at the facility requiring a PSD permit. Therefore, there are no applicable requirements for the facility specific to GHG.

There are no changes to this section of the permit.

General Conditions

The General Conditions were updated to reflect the current Title V boilerplate.

There are no other changes to this section of the permit.

PUBLIC PARTICIPATION

The public participation requirements of 9 VAC 5-80-270 apply to significant permit modifications. A public notice regarding the draft permit was placed in the *News Gazette*, on _____. West Virginia, the only affected state, was sent a copy of the public notice in a letter dated _____. All persons on the Title V mailing list were also sent a copy of the public notice via either letter or email dated _____. Public comments are accepted

from _____ through _____.

EPA was notified of the public notice and sent a copy of the Statement of Basis and draft permit on _____. The 45-day EPA review period will run concurrently with the public comment period and ends on _____.

ATTACHMENTS

- Attachment A: Minor New Source Review Permit, dated April 28, 2006, as amended August 4, 2016.
- Attachment B: Engineering Analysis for Minor New Source Review Permit, dated April 28, 2006, as amended August 4, 2016.
- Attachment C: Mutual Shutdown Letters for Shutdown Equipment

Attachment A



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE

This permit supersedes your minor New Source Review (NSR) permit dated April 28, 2006.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Aladdin Manufacturing Corporation
404 Anderson Street
Glasgow, Virginia 24555
Registration No.: 80269

is authorized to modify and operate

a tile extrusion line (TE1)

located at

404 Anderson Street,
Glasgow (Rockbridge County), Virginia

in accordance with the Conditions of this permit.

Approved on

August 4, 2016

A handwritten signature in blue ink, appearing to read "B. J. Miller", written over a horizontal line.

Deputy Regional Director, Valley Region

Permit consists of 8 pages.
Permit Conditions 1 to 21.

INTRODUCTION

This permit approval is based on the following permit applications:

Application Signature Date	Application Amendment Date	Application Additional Information Received Date
December 20, 2005	---	January 16, 2006, January 31, 2006, February 3, 2006, February 8, 2006, and April 24, 2006
June 9, 2016	June 9, 2016	---

Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-10 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

Equipment List - Equipment at this facility consists of the following:

Equipment to be modified			
Reference No.	Equipment Description	Rated Capacity	Federal Requirements
TE1-MC	Tile Line Extruders	12,800 lbs/hr	---

Equipment permitted prior to the date of this permit			
Reference No.	Equipment Description	Rated Capacity	Federal Requirements
TE1-RTD1	Tile Line Extruder Pellet Receiver Tank 1	45,000 lbs/hr	---

Equipment permitted prior to the date of this permit			
Reference No.	Equipment Description	Rated Capacity	Federal Requirements
TE1-RTD2	Tile Line Extruder Pellet Receiver Tank 2	45,000 lbs/hr	---
TE1-RTD3	Tile Line Extruder Pellet Receiver Tank 3	7,000 lbs/hr	---
TE1-RTD4	Tile Line Extruder Pellet Receiver Tank 4	10,000 lbs/hr	---
Pellet 4	Pellet 4 Storage Silo	110 tons	---
Pellet 5	Pellet 5 Storage Silo	110 tons	---
Pellet 6	Pellet 6 Storage Silo	110 tons	---
TE1-HOP1	Tile Line Extruder Pellet Feed Hopper 1	7,000 lbs/hr	---
TE1-HOP2	Tile Line Extruder Pellet Feed Hopper 2	10,000 lbs/hr	---
TE1-T1	Trial Pellet Receiver Tank 1	3,000 lbs/hr	---
TE1-T2	Trial Pellet Receiver Tank 2	6,000 lbs/hr	---

Specifications provided above are for informational purposes only and do not form enforceable terms or conditions of the permit.

PROCESS REQUIREMENTS

1. **Emission Controls** - Particulate emissions from each tile line extruder pellet receiver tank (TE1-RTD1 – TE1-RTD4), each tile line extruder pellet feed hopper (TE1-HOP1 and TE1-HOP2), each pellet storage silo (Pellet 4 – Pellet 6) and each trial pellet receiver tank (TE1-T1 and TE1-T2) shall be controlled by a fabric filter. Each fabric filter shall be provided with adequate access for inspection and shall be in operation when the corresponding equipment for the pre-blended pellets is operating.
(9 VAC 5-80-1180)
2. **Fugitive Emission Controls** - Fugitive particulate emissions from the handling and transfer of pre-blended pellets shall be controlled by enclosure.
(9 VAC 5-80-1180)
3. **Monitoring Devices** - Each fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the fabric filter is operating.
(9 VAC 5-80-1180 D)

OPERATING LIMITATIONS

4. **Throughput** - The throughput of pre-blended pellets for the tile line extruders (TE1-MC) shall not exceed 56,064 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

EMISSION LIMITS

5. **Process Emission Limits** - Emissions from the operation of the tile line extruders (TE1-MC) shall not exceed the limit specified below:

Volatile Organic Compounds	23.18 tons/yr
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These emissions are derived from the estimated overall emission contribution from the operating limit. Exceedance of the operating limit may be considered credible evidence of the exceedance of the emission limit. Compliance with this emission limit may be determined as stated in Condition 4.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

6. **Visible Emission Limit** - Visible emissions from each tile line extruder pellet receiver tank (TE1-RTD1 – TE1-RTD4), each tile line extruder pellet feed hopper (TE1-HOP1 and TE1-HOP2), each pellet storage silo (Pellet 4 – Pellet 6) and each trial pellet receiver tank (TE1-T1 and TE1-T2) shall not exceed 5% opacity as determined by 40 CFR 60, Appendix A, Method 9. This condition applies at all times except during start-up, shutdown, and malfunction.
(9 VAC 5-80-1180 and 9 VAC 5-50-80)
7. **Visible Emission Limit** - Visible emissions from the tile line extruder stack (TE1-MC) shall not exceed 5% opacity as determined by 40 CFR 60, Appendix A, Method 9. This condition applies at all times except during start-up, shutdown, and malfunction.
(9 VAC 5-80-1180 and 9 VAC 5-50-80)
8. **Visible Fugitive Emission Limit** - Visible fugitive emissions resulting from the handling and transfer of pre-blended pellets shall not exceed 10% opacity as determined by 40 CFR 60, Appendix A, Method 9. This condition applies at all times except during start-up, shutdown and malfunction.
(9 VAC 5-80-1180 and 9 VAC 5-50-50)

CONTINUING COMPLIANCE DETERMINATION

9. **Visible Emissions Evaluation** - Upon request by the DEQ, the permittee shall conduct visible emission evaluations on any exhaust stack to demonstrate compliance with the visible emission limits contained in this permit. The details of the tests shall be arranged with the DEQ.
(9 VAC 5-80-1200 and 9 VAC 5-50-30 G)
10. **Emissions Testing** - The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports, safe sampling platforms, and access at the appropriate locations shall be provided when requested.
(9 VAC 5-50-30 F and 9 VAC 5-80-1180)

RECORDS

11. **On Site Records** - The permittee shall maintain records of emissions data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. Annual throughput of pre-blended pellets (in tons) for the tile line extruders (TE1-MC), as required by Condition 4.
 - b. Annual VOC emissions (in tons) from the tile line extruders (TE1-MC), as required by Condition 5, calculated monthly as the sum of each consecutive 12-month period.
 - c. Globally Harmonized System Safety Data Sheets, Material Safety Data Sheets (MSDS), Certified Product Data Sheets, or other vendor information showing VOC content, HAP content, water content and solids content for each component of the pre-blended pellets used.
 - d. Records of maintenance, operating procedures, and training as required by Condition 16.
 - e. Scheduled and unscheduled maintenance, and operator training.
 - f. Results of all visible emissions evaluations.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-1180 and 9 VAC 5-50-50)

NOTIFICATIONS

12. **Initial Notifications** - The permittee shall furnish written notification to the DEQ, of:

- a. The actual date on which modification of the Tile Line Extruders (TE1-MC) commenced within 30 days after such date.
- b. The actual start-up date of the Tile Line Extruders (TE1-MC) within 15 days after such date.

(9 VAC 5-50-50 and 9 VAC 5-80-1180)

GENERAL CONDITIONS

13. **Permit Invalidation** - The portions of this permit to modify the Tile Line Extruders (TE1-MC) shall become invalid, unless an extension is granted by the DEQ, if:

- a. A program of continuous construction/replacement/modification is not commenced within 18 months from the date of this permit; or
- b. A program of modification is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.

(9 VAC 5-80-1210)

14. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the conditions of this permit;
- c. Fails to comply with any emission standards applicable to a permitted emissions unit, included in this permit;
- d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or
- e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

15. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

- b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

(9 VAC 5-170-130 and 9 VAC 5-80-1180)

- 16. Maintenance/Operating Procedures** - At all times, including periods of start-up, shutdown and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

- 17. Record of Malfunctions** - The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.

(9VAC 5-20-180 J and 9 VAC 5-80-1180 D)

18. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the DEQ, of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the DEQ.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)
19. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)
20. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the DEQ, of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-1240)
21. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

Attachment B



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Valley Regional Office

INTRA-AGENCY MEMORANDUM

4411 Early Road - P. O. Box 3000

Harrisonburg, VA 22801-3000

Permit Writer			Date	8/4/2016
Air Permit Manager			Date	8/4/2016
Memo To	Air Permit File			
Facility Name	Aladdin Manufacturing Corporation (formerly Mohawk Industries, Inc. – Lees Carpet Division)			
Registration Number	80269			
Latitude / Longitude	37.63996	Latitude (N)	-79.44357	Longitude (W)
Elevation (feet)	738			
Distance to Nearest Class I Area (select one)	--	SNP (km)	2	JRF (km)
FLM Notification Required (Y/N)	Y			
AFS Classification (A, SM, B)	A	Before permit action	A	After permit action
Pollutants for Which the Source is Title V Major	NO _x , VOC, GHG	Before permit action	NO _x , VOC, GHG	After permit action
PSD Major Source (Y/N)	N	Before permit action	N	After permit action
Pollutants for Which the Source is PSD Major	N/A	Before permit action	N/A	After permit action

I. Introduction

Aladdin Manufacturing Corporation, formerly Mohawk Industries, Inc. – Lees Carpet Division, (Aladdin or the facility) owns and operates a nylon carpet manufacturing facility located at 404 Anderson Street, Glasgow, Virginia.

Aladdin has submitted an application under a cover letter dated May 31, 2016, received June 2, 2016, requesting changes to the tile extrusion line (TE1). Amended pages of the application, dated June 9, 2016, were received on June 10, 2016. The permit application fee was processed on August 3, 2016. The application was deemed complete on August 3, 2016.

The tile extrusion line (TE1) is currently permitted under a minor New Source Review (NSR) permit dated April 28, 2006.

II. Emission Units / Process Description

In addition to the NSR permit for the tile extrusion line (TE1), dated May 28, 2006, Aladdin currently operates the under the additional following NSR permits:

- July 10, 1986 (amended June 29, 2006 and August 6, 2007) – permit to construct and operate Batch Yarn Dyeing (formerly known as the Otting sock dye range), designated YD3 (Ilma Sample Dye Line), YD4 (Lanly Dryer), and YD5 (Pack Kettles). This line is subject to 40 CFR 63, Subpart OOOO;
- December 12, 1990 (amended September 4, 2007) – permit to construct and operate the #2 Ilma Carpet Yarn Dyeing Line, designated YD2. This line is subject to 40 CFR 63, Subpart OOOO;
- August 1, 2007 (amended August 7, 2013) – permit to modify and operate the #1 Ilma Carpet Yarn Dyeing Line, designated YD1. This line is subject to 40 CFR 63, Subpart OOOO;
- August 12, 2002 (amended June 29, 2006) – permit to install and operate a Hot Melt Sample Line, designated HMS;
- July 13, 2011 – permit to construct and operate a PVC carpet backing line, designated PVC1; and a calcium carbonate storage silo, designated PVCS-C1; a glass filler silo, designated PVCS-C2; and a feed hopper, designated PVCS-FH. The carpet backing line is subject to 40 CFR 63, Subpart OOOO;
- March 27, 2006 – permit to construct and operate an extruded coat carpet backing line for the Hot Melt Line, designated EC, and a research and development sample hot melt extruder, designated HME-S. (Note that there are no mNSR permits for the Hot Melt Line, designated HM1, as it is an existing operation.) This permit also allowed for the modification of the pellet 2 storage silo, designated Pellet 2;

- March 24, 2011 (amended March 18, 2015) – permit to construct and operate a Latex Pre-Coat Range, designated LPCR-1;
- July 1, 2008 (amended October 22, 2009, and August 8, 2013) – permit to construct and operate Superba Dye Lines 1 through 4, designated SL1 through SL4. These lines are subject to 40 CFR 63, Subpart OOOO; and
- July 30, 2009 (supersedes permit issued December 5, 1997) – permit to construct and operate a replacement storage silo, designated VAES.

In addition to the minor NSR permits listed above, the facility also operates under the following permits:

- A State Operating Permit (SOP) issued on December 2, 2009, as amended March 19, 2012, and August 6, 2013. The SOP provides limitations on the two natural gas and distillate oil-fired boilers (Ref. B5 and B6). Although the facility is classified as a synthetic minor source of HAPs, the applicability of 40 CFR 63, Subpart OOOO, based on the EPA's "once in, always in" policy, still applies.
- Title V permit, with an effective date of June 7, 2012, with an expiration date of June 6, 2017, and a significant modification date of January 30, 2014.

The facility proposes the following:

- Name change: The facility has requested the name of the facility be changed to Aladdin Manufacturing Corporation. Mohawk Industries, Inc. will remain the parent company of the facility.
- Removal of Pre-coat Roller Coater Station: The facility has removed the Pre-coat Roller Coater Station (TE1-RC), and has requested the associated permit conditions and limitations be removed from the permit.
- Combination of Tile Line Extruders: The facility has requested that the two tile line extruders (TE-MC1 and TE-MC2) be combined into a single unit for permitting purposes, designated TE1-MC. The facility has requested the individual throughputs and emission limitations for the two tile line extruders are combined into a single limit. The two tile line extruders are separate pieces of equipment, but share a common exhaust stack.
- Removal of Daily Throughput Limitations: The facility has requested the removal of the daily throughput limitations of pre-blended pellets for the tile line extruders.
- Change in Extrusion Pellet Formulation: As part of the proposed project the facility proposes to utilize a new blended pellet for the extrusion process for the tile extrusion line. The proposed pellet consists contains a higher VOC content as well

as various HAP constituents not previously evaluated. The proposed pre-blended pellet consists the following composition: calcium carbonate (70%), polyolefin copolymer/terpolymer (20%), aliphatic hydrocarbon resin (5%), polyolefin (3%), maleated olefin polymer (2%), and black polyethylene concentrate (0.1%). Emissions of concern from the proposed change in extrusion pellet formulation include VOC, and the following hazardous air pollutants: hexane, toluene, benzene, maleic anhydride, mercury, 1,4 dioxane, 1,3 butadiene, and carbonyl sulfide.

A description of the Tile Extrusion Line (TE1) is provided below:

Tile Extrusion Line (TE1)

The Tile Extrusion Line (TE1) carpet coating range has a rated carpet throughput of 3,200 yd²/hr. The line utilizes a topical solution (stain block, anti-microbial, etc.) and an extruded coat for the carpet product; a detailed description of the process line consists of the following operations:

Topical System

The tile extrusion line begins with varying lengths of uncoated tufted carpet being unrolled and sewn end-to-end and fed into the topical system. A topical solution is applied by foam onto the carpet and dried in a five zone steam-heated dryer to remove the water from the topical. After drying, the carpet is conveyed through an infrared heater. There are no proposed changes to the Topical System as a result of the proposed modifications.

Pre-Coat System

The pre-coat system has been shut down and removed from the facility.

Extrusion System

After the topical system, extruded coating is added to the carpet at two parts of the extrusion line. The facility has requested that the two tile line extruders (TE-MC1 and TE-MC2) be combined into a single unit for permitting purposes (designated TE1-MC) since the units vent to a common stack. The tile line extruders melt pre-blended pellets and apply the molten material directly to the carpet to form the backing. As indicated above, the facility proposes to change the pre-blended pellet formulation. A fiberglass scrim is added to the carpet backing and the carpet is wrapped around a chilled cooling can before entering the second part of the extrusion station. At the second part of the extrusion station, a fiberglass scrim and the final backing is added. Following the second extrusion station, the carpet is cooled by a chilled cooling can. A cooling drum is used to provide further cooling of the carpet prior to the cutting of the tiles.

Emissions of concern from the extrusion system (designated TE1-MC) are: particulate matter emissions (PM, PM-10, and PM-2.5), VOC, and various HAP emissions.

No emissions are expected from the cooling cans or the cooling drum.

There are no changes to the Pellet Handling, Pellet Storage System, or the Trial Pellet Systems. The Pre-coat Roller Coater Station (TE1-RC) and associated resin storage tanks (TE1-RT and TE1-DT) have been shut down and removed from the facility.

III. Regulatory Review

A. 9 VAC 5 Chapter 80, Article 6 - Minor New Source Review

Minor NSR permitting applicability is, in part, based on the uncontrolled emission rate increase (UEI) of criteria pollutants for the project as defined in the Regulations. The UEI for criteria pollutants is evaluated as the sum of the new uncontrolled emissions (NUE) minus the sum of the current uncontrolled emissions (CUE) for the units in a given project ($UEI = NUE - CUE$). The UEI is then compared to the criteria pollutant exemptions levels in 9 VAC 5-80-1105. If the UEI exceeds the exemption level for any one criteria pollutant, the source is subject to the permitting requirements of 9 VAC 5 Chapter 80, Article 6.

The UEI is only evaluated for the extrusion system as a result of the change in pre-blended pellets. There are no changes to the Topical System, Pellet Handling, Pellet Storage System, or the Trial Pellet Systems as a result of the proposed change in pre-blended pellets; therefore there are no changes in emissions associated with these systems. Additionally, there are no emissions from the cooling cans or the cooling drum.

CUE for the project are currently permitted emission limitations, which are calculated based on the permitted pre-blended backing pellet for the tile line extruders (designated TE1-MC, as described in Section II).

NUE for the project are based on the proposed formulation for the new pre-blended backing pellet for the two tile line extruders assuming operation at 8,760 hours per year. The permitted throughputs for the two tile line extruders are not considered for the NUE for permitting applicability due to the request from the facility to change the permitted pellet throughput.

Table 1: Uncontrolled Emission Increase – Summary

Pollutant	NUE (tons/yr)	CUE (tons/yr)	UEI = NUE – CUE (tons/yr)	Exemption Thresholds (tons/yr)*	Exempt?
PM	0.056	0.057	0.00	15	Yes
PM-10	0.056	0.057	0.00	10	Yes
PM-2.5	0.056	0.057	0.00	6	Yes
VOC	23.18	14.05	+9.13	10	Yes

*Exemption thresholds taken from 9 VAC 5-80-1105 D for projects at existing sources.

As shown above in Table 1, the UEI for each criteria pollutant is below the respective exemption threshold in 9 VAC 5-80-1105 D.

The Tile Extrusion Line (TE1) is not subject to 9 VAC 5-80-1105 E or F as it is covered by an applicable source-wide MACT standard, as discussed in Section III.F below.

Since the proposed project is exempt under both 9 VAC 5-80-1105 B through D, taken as a group, and under 9 VAC 5-80-1105 E and F, the project is exempt from Article 6 (Minor NSR) permitting. The necessary changes to the minor NSR permit meet the requirements of 9 VAC 5-80-1290, and are being processed as a significant amendment.

B. 9 VAC 5 Chapter 80, Article 5 - State Operating Permit (SOP)

SOP is not implicated by the minor amendment to the NSR permit.

C. 9 VAC 5 Chapter 80, Article 8 - PSD Major New Source Review

The facility's potential to emit each regulated pollutant will remain below 250 tons per year, the threshold after which a facility is subject to Prevention of Significant Deterioration (PSD) permitting. Accordingly, the facility is not subject to PSD review.

D. 9 VAC 5 Chapter 50, Part II, Article 5 – NSPS

There are no New Source Performance Standards (NSPS) applicable to the Tile Extrusion Line.

E. 9 VAC 5 Chapter 60, Part II, Article 1 – NESHAPS

There are no National Emission Standards for Hazardous Air Pollutants (NESHAPS) applicable to the proposed project.

F. 9 VAC 5 Chapter 60, Part II, Article II - MACT

Mohawk is subject to the requirements of 40 CFR 63, Subpart OOOO – National Emission Standards for Fabric and Other Textiles Printing, Coating, and Dyeing Operations. Although Mohawk has since become an area source, the requirements of Subpart OOOO are still applicable, based on the EPA's "once in, always in" policy.

The Tile Extrusion Line was constructed in 2006 prior to the facility becoming an area source, and after the initial compliance date of the MACT. The Tile Extrusion Line (TE1) is a coating line included in the affected source (defined

under §63.4281 and §63.4282)¹. Since the Tile Extrusion Line (TE1) does not use organic HAPs, defined in the rule under §63.4371, it is exempted from the MACT standards. Therefore, the unit is exempt from the state toxics rule.

G. 9 VAC 5 Chapter 80, Article 7 – New and Reconstructed Major Sources of HAP

Article 7 does not apply to this permit action because there are no HAP emissions associated with the proposed project that are greater than the Major Source thresholds; in addition there will be no changes in existing HAP emissions.

H. 9 VAC 5 Chapter 40, Part II, Existing Sources - Emission Standards

No existing source standards apply to the proposed project.

I. 9 VAC 5 Chapter 50, Part II, Article 1 – Visible Emissions (Rule 5-1)

The Tile Extrusion Line was originally constructed in 2006. The visible emissions standard in Rule 5-1 is applicable to the Tile Extrusion Line; Rule 5-1 is applicable, however the minor NSR permit has more stringent limitations.

IV. Best Available Control Technology Review (BACT) (9 VAC 5-50-260)

A project shall apply BACT for each regulated pollutant for which there would be an increase in the uncontrolled emission rate equal to or greater than the levels in 9 VAC 5-80-1105 C or D. This requirement applies to each affected emissions unit in the project. Additionally, if a stationary source is not exempt under 9 VAC 5-60-300 C, D, or E, then the owner shall employ BACT for the control of toxic pollutants.

BACT does not apply to the proposed project since the UEI is less than the levels in 9 VAC 5-80-1105 D for all criteria pollutants. Additionally the Tile Extrusion Line (TE1) is exempt from the state toxic rule under 9 VAC 5-60-300 C.3, therefore BACT is not applicable for toxic pollutants.

The previous BACT determinations from the April 28, 2006 remain applicable to the Tile Extrusion Line (TE1) after the proposed project. The individual throughput limitations for the Tile Line Extruders (originally designated TE-MC1 and TE-MC2, now designated TE1-MC) have been combined into a single limitation. The change in formulation of backing pellets results in a lower combined throughput for the Tile Extrusion Line. The individual annual throughputs of pellets were 21,900 tons/yr for TE1-MC1, and 35,040 tons/yr for TE1-MC2, for a combined throughput of 56,940 tons/yr, as established in the April 28, 2006 NSR permit. The proposed combined throughput is 56,064 tons/yr.

¹ Carpet back coating is a regulated web coating process. Taken from Page 3-5 of EPA [Comment/Response Document](#), dated January 2003.

V. Summary of Permitted Allowable Emissions (Increases)

Criteria pollutant emissions from the proposed Tile Extrusion Line Project are summarized in Table 2, below:

Table 2: Summary of Criteria Emissions from the Tile Extrusion Project

Pollutant	Emissions	
	(lbs/hr)	(tons/yr)
PM	0.01	0.06
PM-10	0.01	0.06
PM-2.5	0.01	0.06
VOC	5.29	23.18

Table 3: Emission Increases from the Tile Extrusion Project

Pollutant	Currently Permitted	Proposed	Increase
	(tons/yr)	(tons/yr)	(tons/yr)
PM	0.06	0.06	0.0
PM-10	0.06	0.06	0.0
PM-2.5	0.06	0.06	0.0
VOC	14.05	23.18	+9.13

Detailed emission calculations are provided in Attachment B.

HAP emissions from the proposed Tile Extrusion Line Project are summarized in Table 4, below:

Table 4: Summary of HAP Emissions from the Tile Extrusion Project

Pollutant	Emissions	
	(lbs/hr)	(tons/yr)
Hexane	0.77	3.36
Toluene	0.08	0.34
Benzene	2.5E-03	1.1E-02
Maleic Anhydride	0.26	1.13
Mercury	2.5E-06	1.1E-05
1,4 Dioxane	2.5E-03	1.1E-02
1,3 Butadiene	3.8E-07	1.7E-06
Carbonyl Sulfide	9.6E-07	4.2E-06
Total HAPs	1.11	4.86

Detailed emission calculations are provided in Attachment B.

VI. Dispersion Modeling

A. Criteria Pollutants

As shown above in Table 2 and Table 3, the emissions of all criteria pollutants from the Tile Extrusion project are below the modeling thresholds (PSD significance levels) as contained in the *DEQ New Source Review Permits Program Manual* (as revised April 1, 2002) and 9 VAC 5-80-1110. Therefore, dispersion modeling is not required for any criteria pollutant.

B. Toxic Pollutants

The Tile Extrusion Line (TE1) is exempt from the state toxic rule under 9 VAC 5-60-300 C.3, therefore the line was not considered for modeling purposes.

VII. Changes from Existing Permit

The VRO NSR Permit Template (dated May 26, 2016) was used to draft the permit. There are no changes to the boilerplate.

The following changes have been made to the existing minor NSR permit dated April 28, 2006. Please note the condition numbers refer to the current permit action; condition numbers in parenthesis () refer to the existing permit dated April 28, 2006.

- All Conditions: All conditions were updated to reflect the following:
 - The current DEQ formatting and language.
 - The name of the facility was changed to Aladdin Manufacturing Corporation throughout the permit.
 - The Pre-Coat Roller Coater Station (TE1-RC) has been shut down and removed from the permit. All applicable requirements and references to the Pre-Coat Roller Coater Station (TE1-RC) have been removed from the permit.
 - The exempt equipment, Resin Storage Tank (TE1-RT) and Resin Day Tank (TE1-DT), have been shut down and removed from the permit.
- Introduction: The permit application date was added to the introduction of the permit.
- Equipment List: The Tile Extruders, formerly designated TE-MC1 and TE-MC2, were combined into a single unit for permitting purposes. The new designation is TE1-MC. Changes to the designations are applied throughout the permit.
- Condition 4 - Throughput: The condition establishes the throughput of the reformulated pre-blended pellets as a result of this project. The throughput limitation on pre-blended pellets for the tile line extruders (TE1-MC) shall not exceed 56,064 tons/yr.
- Condition 5 – Process Emission Limits: The condition was revised to reflect the VOC emission limitations from Tile Line Extruders (TE1-MC) as a result of the reformulated pre-blended pellets associated with this project. Emission increases are shown in Table

- Condition 7 – Visible Emission Limit: The visible emission limit for the tile line extruder stack (TE1-MC) shall not exceed 5% opacity as determined by the 40 CFR 60, Appendix A, Method 9.
- Condition 11 – On Site Records: Recordkeeping requirements for the individual Tile Extruders, formerly designated TE-MC1 and TE-MC2, were combined to represent the new designation (TE1-MC). The following records are required to demonstrate compliance with the permit:
 - Annual throughput of pre-blended pellets (in tons) for the tile line extruders (TE1-MC), calculated monthly as the sum of each consecutive 12-month period.
 - Annual VOC emissions (in tons) from the tile line extruders (TE1-MC) calculated monthly as the sum of each consecutive 12-month period.
 - Material Safety Data Sheets (MSDS) or other vendor information showing VOC content, HAP content, water content and solids content for each component of the pre-blended pellets used.
- (Condition 5 - Throughput): The throughput limitation for the Pre-coat Roller Coater Station (TE1-RC) was removed from the permit; the equipment is shut down.
- (Condition 6 – Throughput): The daily throughput limitation for the Tile Line Extruder 1 (TE1-MC1) was removed from the permit. The condition is no longer applicable.
- (Condition 7 – Throughput): The daily throughput limitation for the Tile Line Extruder 2 (TE1-MC2) was removed from the permit. The condition is no longer applicable.
- (Condition 10 – Process Emission Limits): The emission limitation for the Pre-coat Roller Coater Station (TE1-RC) was removed from the permit; the equipment is shut down.
- (Condition 18 – On Site Records): The following recordkeeping requirements were removed from the permit:
 - A – Daily hours of operation of the Tile Extrusion Line. The recordkeeping requirement is not applicable to the limitations in the permit.
 - B – Daily throughput of pre-blended pellets for the tile line extruders. The recordkeeping requirement is not applicable to the limitations in the permit.
 - C - Annual throughput of pre-coat resin (in tons) for the pre-coat roller coater station (TE1-RC). The equipment is shutdown.
 - E - Monthly and annual VOC emissions (in tons) from the pre-coat roller coater station (TE1-RC). The equipment is shutdown.
 - G – Material safety data sheets for the pre-coat resin. The pre-coat roller coater station (TE1-RC) is shutdown.
- (Condition 19 – Initial Notifications): The initial notifications for the construction of the Tile Extrusion Line have been removed from the permit. The initial construction notifications have already been submitted; the condition has been fulfilled.
- (Condition 20 – Permit Invalidation): The permit invalidation condition for the construction of the Tile Extrusion Line has been removed from the permit. The condition has been fulfilled.

VIII. Compliance Demonstration

Compliance with the limitations of this permit are established through monitoring and recordkeeping. The facility is required to keep records of:

- Annual throughput of pre-blended pellets (in tons) for the tile line extruders (TE1-MC).
- Annual VOC emissions (in tons) from the tile line extruders (TE1-MC), calculated monthly as the sum of each consecutive 12-month period.
- Globally Harmonized System Safety Data Sheets, Material Safety Data Sheets (MSDS), Certified Product Data Sheets, or other vendor information showing VOC content, HAP content, water content and solids content for each component of the pre-blended pellets used.
- Records of maintenance, operating procedures, and training.
- Scheduled and unscheduled maintenance, and operator training.
- Results of all visible emissions evaluations.

IX. Title V Review - 9 VAC 5 Chapter 80, Article 1

Mohawk is a Title V source with the potential to emit (PTE) greater than 100 tons per year each of NO_x and VOC, and a PTE of greater than 100,000 tons per year of greenhouse gases (GHG). There are no changes to the facility's Title V classification as a result of this permit action.

The facility currently operates under a Title V operating permit, with an effective date of June 7, 2012, an expiration date of June 6, 2017, and a significant modification date of January 30, 2014. The facility submitted a permit application to incorporate the proposed changes to the minor NSR permit into the Title V permit under the same cover letter for the minor NSR permit changes. The Title V modification is being processed as a separate permit action.

X. Site Suitability

The site suitability analysis applies only to new (Greenfield) sources and to PSD major modifications, neither of which apply to this minor amendment to the NSR permit.

XI. Public Participation

There are no public participation requirements for this minor amendment to the NSR permit.

XII. Permit Application Fee

Since Mohawk is a Title V source, a permit application fee of \$788 is required before this minor NSR amendment can be issued. This fee was logged by DEQ's financial office on August 3, 2016.

XIII. Other Considerations

The Federal Land Manager (FLM) for the James River Face (JRF) was notified of the permit application on June 8, 2016. In an email dated June 9, 2016, the FLM requested a copy of the permit application. A copy of the permit application was sent on June 9, 2016. In an email dated June 15, 2016, the FLM indicated that no further information was necessary, and no adverse impacts from the modification to James River Face are anticipated.

A mutual shutdown letter for the Pre-coat Roller Coater Station (TE1-RC) is being processed separately.

The proposed minor amendment to the existing minor NSR permit involves modification of the Tile Extrusion Line (TE1). Please see the engineering memoranda for these previous actions for additional information on permitting for the Tile Extrusion Line (TE1) at the facility.

CEDS Application Number	Permit Issuance Date	Brief Description
17	4/28/2006	Install Tile Extrusion Line

XIV. Recommendations

Approval of the proposed minor amendment to the NSR permit is recommended.

Attachments

Attachment A – Permitting Applicability Calculations
Attachment B – Controlled Emission Calculations
Attachment C – Total Emissions from Tile Extrusion Line

Attachment A

Permitting Applicability Calculations

Attachment A-1: Permitting Applicability Calculations
Tile Extrusion Line (TE1)

TILE LINE EXTRUDER (TE1-MC)

Uncontrolled Emission Increase: Summary

Pollutant	NUE	CUE	UEI = NUE - CUE	Exemption Thresholds ^a	Exempt?
	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	
PM	0.056	0.057	0.00	15	Yes
PM-10	0.056	0.057	0.00	10	Yes
PM-2.5	0.056	0.057	0.00	6	Yes
VOC	23.18	14.05	9.13	10	Yes

New Uncontrolled Emissions (NUE): Summary ^b

Pollutant	TE1-MC	
	(lbs/hr)	(tons/yr)
PM	0.013	0.056
PM-10 ^c	0.013	0.056
PM-2.5 ^c	0.013	0.056
VOC	5.29	23.18

Current Uncontrolled Emissions (CUE): Summary

Pollutant	TE-MC1	TE-MC2	Sum
	(tons/yr)	(tons/yr)	(tons/yr)
PM ^e	0.022	0.035	0.057
PM-10 ^{c, e}	0.022	0.035	0.057
PM-2.5 ^{c, e}	0.022	0.035	0.057
VOC ^d	5.4	8.65	14.05

Notes:

a - Exemption thresholds taken from 9 VAC 5-80-1105 D for projects at existing sources.

b - New Uncontrolled Emissions (NUE) are based on the proposed pellet blend.

c - PM-10 and PM-2.5 emissions are assumed equal to PM emissions as a conservative estimate.

d - Current Uncontrolled Emissions (CUE) of VOC are based on the emission limitations from the April 28, 2006 minor NSR permit.

e - Current Uncontrolled Emissions (CUE) of PM, PM-10, and PM-2.5 are calculated based on the pellet throughput limitations from the NSR Permit, dated April 28, 2006. Since emissions are less than 0.5 tons/yr no numerical emission limitations are included in the NSR permit.

Attachment A-2: New Uncontrolled Emission (NUE) Calculations
Tile Extrusion Line (TE1)

TILE LINE EXTRUDER (TE1-MC)

Pellet Component ^b	Fraction of Pellet Component (%)	VOC Concentration (per component)	VOC Concentration in Pellets
	%	(ppm) ^a	(ppm) ^a
Calcium Carbonate (JR PI CaCO3)	70.00%	0	0
Polyolefin copolymer (Vistamaxx 6502)	19.90%	1500	298.5
Aliphatic hydrocarbon resin (Escorez)	5.00%	1000	50
Polyolefin (Achieve)	3.00%	1500	45
Maleated olefin polymer (Exxelor 1040)	2.00%	1000	20
Black polyethylene concentrate (PE-555A)	0.10%	0	0
Total in Pellet Blend	100.00%	--	413.5

Hazardous Air Pollutants

Pollutant ^c	Vistamaxx 6502 Concentrations	Achieve Concentrations	Exxelor 1040 Concentrations	Total HAP Concentrations in Pellet Blend
	ppm	ppm	ppm	ppm
Hexane	3.00E+02	1.00E+01	0.00E+00	6.00E+01
Toluene	3.00E+01	2.50E+00	0.00E+00	6.05E+00
Benzene	1.00E+00	5.00E-04	0.00E+00	1.99E-01
Maleic Anhydride	1.00E+00	0.00E+00	1.00E+03	2.02E+01
Mercury	1.00E-03	0.00E+00	0.00E+00	1.99E-04
1,4 Dioxane	1.00E+00	0.00E+00	0.00E+00	1.99E-01
1,3 Butadiene	0.00E+00	1.00E-03	0.00E+00	3.00E-05
Carbonyl Sulfide	0.00E+00	2.50E-03	0.00E+00	7.50E-05
Total	3.33E+02	1.25E+01	1.00E+03	8.66E+01

HOURLY EMISSIONS

Pollutant ^c	Maximum Carpet Process Rate	Pellet Usage / Extrusion Rate	Total in Pellets	Hourly Emissions ^d
	yd ² /hr	lb/yd ²	ppm	lbs/hr
VOC	3,200	4	413.50	5.29
Hexane	3,200	4	6.00E+01	0.77
Toluene	3,200	4	6.05E+00	0.08
Benzene	3,200	4	1.99E-01	0.00
Maleic Anhydride	3,200	4	2.02E+01	0.26
Mercury	3,200	4	1.99E-04	0.00
1,4 Dioxane	3,200	4	1.99E-01	0.00
1,3 Butadiene	3,200	4	3.00E-05	0.00
Carbonyl Sulfide	3,200	4	7.50E-05	0.00
Total HAPs	--	--	--	1.11

ANNUAL EMISSIONS

Pollutant ^c	Maximum Carpet Process Rate		Pellet Usage / Extrusion Rate	Total in Pellets	Annual Emissions ^e
	yd ² /hr	yd ² /yr	lb/yd ²	ppm	tons/yr
VOC	3,200	28,032,000	4	413.50	23.18
Hexane	3,200	28,032,000	4	6.00E+01	3.36E+00
Toluene	3,200	28,032,000	4	6.05E+00	3.39E-01
Benzene	3,200	28,032,000	4	1.99E-01	1.12E-02
Maleic Anhydride	3,200	28,032,000	4	2.02E+01	1.13E+00
Mercury	3,200	28,032,000	4	1.99E-04	1.12E-05
1,4 Dioxane	3,200	28,032,000	4	1.99E-01	1.12E-02
1,3 Butadiene	3,200	28,032,000	4	3.00E-05	1.68E-06
Carbonyl Sulfide	3,200	28,032,000	4	7.50E-05	4.20E-06
Total HAPs	--	--	--	--	4.86

Notes:

a - Taken from MSDS and Product Data Sheets submitted with the application.

b - The Tile Extrusion Line uses pre-blended pellets composed of six parts at the percentages specified.

c - Hazardous air pollutant (HAP) is provided for informational purposes only.

d - Example Calculation:

VOC lb/hr = (Carpet Process Rate)*(Pellet Extrusion Rate)*(Pollutant ppm)

VOC lb/hr = (3,200 yd²/hr)*(4 lb/yd²)*(413.5/1,000,000) = 5.29 lb/hr

e - Example Calculation:

VOC tons/yr = [(Carpet Process Rate)*(8760 hrs/yr)]*(Pellet Extrusion Rate)*(Pollutant ppm)*(lb/ton conversion)

VOC tons/yr = (28,032,000 yd²/yr)*(4 lb/yd²)*(413.5/1,000,000)*(1/2000) = 23.18 tons/yr

Attachment A-3: Permit Applicability Emissions Calculations - PM/PM-10/PM-2.5
Tile Extrusion Line (TE1)

Current Uncontrolled Emission Calculations (from April 2006 NSR Permit)

Emission Unit	Throughput Limitation ^a	Emission Factor ^b	Annual Emissions
	ton pellets/yr	lb/ton	tons/yr
Tile Line Extruder 1 (TE1-MC1)	21900	0.0020	0.022
Tile Line Extruder 2 (TE1-MC2)	35040	0.0020	0.035
		Total ^b	0.057

New Uncontrolled Emission Calculations

Emission Unit	Maximum Carpet Process Rate	Pellet Usage / Extrusion Rate	Pellet Usage			Emission Factor ^b	Particulate Matter Emissions ^c	
	yd ² /hr	lb/yd ²	lb/hr	ton/hr	ton/yr	lb/ton	lbs/hr	tons/yr
Tile Line Extruders (TE1-MC)	3,200	4	12,800	6.4	56064	0.0020	0.013	0.056

Notes:

a - Pellet throughput limitations are taken from the April 28, 2006 NSR Permit.

b - Based on the study from the October 1997 Journal of the Air & Waste Management Association titled "Development of Emission Factors for Ethylene-Vinyl Acetate and Ethylene-Methyl Acrylate Copolymer Processing"

c - PM-10 and PM-2.5 emissions are assumed equal to PM emissions as a conservative estimate.

Attachment B

Controlled Emission Calculations

Attachment B-1: Controlled Emission Calculations

Tile Extrusion Line (TE1)

Controlled Emissions: Summary

Pollutant	TE1-MC	
	(lbs/hr)	(tons/yr)
PM	0.01	0.06
PM-10 ^b	0.01	0.06
PM-2.5 ^b	0.01	0.06
VOC	5.29	23.18

Controlled Emission Calculations: PM, PM-10, and PM-2.5

Emission Unit	Maximum Carpet Process Rate	Pellet Usage / Extrusion Rate	Pellet Usage			Emission Factor ^a	Particulate Matter Emissions ^b	
	yd ² /hr	lb/yd ²	lb/hr	ton/hr	ton/yr	lb/ton	lbs/hr	tons/yr
Tile Line Extruders (TE1-MC)	3,200	4	12,800	6.4	56064	0.0020	0.01	0.06

Notes:

a - Based on the study from the October 1997 Journal of the Air & Waste Management Association titled "Development of Emission Factors for Ethylene-Vinyl Acetate and Ethylene-Methyl Acrylate Copolymer Processing"

b - PM-10 and PM-2.5 emissions are assumed equal to PM emissions as a conservative estimate.

Emission Increases: Summary

Pollutant	Previous: 2006 Permit	Proposed	Increase
	(tons/yr)	(tons/yr)	(tons/yr)
PM	0.06	0.06	0.0
PM-10 ^b	0.06	0.06	0.0
PM-2.5 ^b	0.06	0.06	0.0
VOC	14.05	23.18	9.13

Attachment B-2: Controlled Emission Calculations
Tile Extrusion Line (TE1)

TILE LINE EXTRUDER (TE1-MC)

Pellet Component ^b	Fraction of Pellet Component (%)	VOC Concentration (per component)	VOC Concentration in Pellets
	%	(ppm) ^a	(ppm) ^a
Calcium Carbonate (JR PI CaCO3)	70.00%	0	0
Polyolefin copolymer (Vistamaxx 6502)	19.90%	1500	298.5
Aliphatic hydrocarbon resin (Escorez)	5.00%	1000	50
Polyolefin (Achieve)	3.00%	1500	45
Maleated olefin polymer (Exxelor 1040)	2.00%	1000	20
Black polyethylene concentrate (PE-555A)	0.10%	0	0
Total in Pellet Blend	100.00%	--	413.5

Hazardous Air Pollutants

Pollutant ^c	Vistamaxx 6502 Concentrations	Achieve Concentrations	Exxelor 1040 Concentrations	Total HAP Concentrations in Pellet Blend
	ppm	ppm	ppm	ppm
Hexane	3.00E+02	1.00E+01	0.00E+00	6.00E+01
Toluene	3.00E+01	2.50E+00	0.00E+00	6.05E+00
Benzene	1.00E+00	5.00E-04	0.00E+00	1.99E-01
Maleic Anhydride	1.00E+00	0.00E+00	1.00E+03	2.02E+01
Mercury	1.00E-03	0.00E+00	0.00E+00	1.99E-04
1,4 Dioxane	1.00E+00	0.00E+00	0.00E+00	1.99E-01
1,3 Butadiene	0.00E+00	1.00E-03	0.00E+00	3.00E-05
Carbonyl Sulfide	0.00E+00	2.50E-03	0.00E+00	7.50E-05
Total	3.33E+02	1.25E+01	1.00E+03	8.66E+01

HOURLY EMISSIONS

Pollutant ^c	Maximum Carpet Process Rate	Pellet Usage / Extrusion Rate	Total in Pellets	Hourly Emissions ^d
	yd ² /hr	lb/yd ²	ppm	lbs/hr
VOC	3,200	4	413.50	5.29
Hexane	3,200	4	6.00E+01	0.77
Toluene	3,200	4	6.05E+00	0.08
Benzene	3,200	4	1.99E-01	0.00
Maleic Anhydride	3,200	4	2.02E+01	0.26
Mercury	3,200	4	1.99E-04	0.00
1,4 Dioxane	3,200	4	1.99E-01	0.00
1,3 Butadiene	3,200	4	3.00E-05	0.00
Carbonyl Sulfide	3,200	4	7.50E-05	0.00
Total HAPs	--	--	--	1.11

ANNUAL EMISSIONS

Pollutant ^c	Maximum Carpet Process Rate		Pellet Usage / Extrusion Rate	Total in Pellets	Annual Emissions ^e
	yd ² /hr	yd ² /yr	lb/yd ²	ppm	tons/yr
VOC	3,200	28,032,000	4	413.50	23.18
Hexane	3,200	28,032,000	4	6.00E+01	3.36E+00
Toluene	3,200	28,032,000	4	6.05E+00	3.39E-01
Benzene	3,200	28,032,000	4	1.99E-01	1.12E-02
Maleic Anhydride	3,200	28,032,000	4	2.02E+01	1.13E+00
Mercury	3,200	28,032,000	4	1.99E-04	1.12E-05
1,4 Dioxane	3,200	28,032,000	4	1.99E-01	1.12E-02
1,3 Butadiene	3,200	28,032,000	4	3.00E-05	1.68E-06
Carbonyl Sulfide	3,200	28,032,000	4	7.50E-05	4.20E-06
Total HAPs	--	--	--	--	4.86

Notes:

a - Taken from MSDS and Product Data Sheets submitted with the application.

b - The Tile Extrusion Line uses pre-blended pellets composed of six parts at the percentages specified.

c - Hazardous air pollutant (HAP) is provided for informational purposes only.

d - Example Calculation:

VOC lb/hr = (Carpet Process Rate)*(Pellet Extrusion Rate)*(Pollutant ppm)

VOC lb/hr = (3,200 yd²/hr)*(4 lb/yd²)*(413.5/1,000,000) = 5.29 lb/hr

e - Example Calculation:

VOC tons/yr = [(Carpet Process Rate)*(8760 hrs/yr)]*(Pellet Extrusion Rate)*(Pollutant ppm)*(lb/ton conversion)

VOC tons/yr = (28,032,000 yd²/yr)*(4 lb/yd²)*(413.5/1,000,000)*(1/2000) = 23.18 tons/yr

Attachment C

Total Emissions from Tile Extrusion Line

Attachment C: Total Emissions from Tile Extrusion Line (TE1)

Tile Extrusion Line (TE1): Total

Pollutant	Emissions from TE1	
	(lbs/hr)	(tons/yr)
PM	0.02	0.06
PM-10	0.02	0.06
PM-2.5	0.02	0.06
VOC	5.29	23.18

Tile Extruders (TE1-MC): PM/PM-10/PM-2.5 and VOC

Pollutant	TE1-MC	
	(lbs/hr)	(tons/yr)
PM	0.01	0.06
PM-10 ^b	0.01	0.06
PM-2.5 ^b	0.01	0.06
VOC	5.29	23.18

Receivers, Pellet Tanks, and Silos: PM/PM-10/PM-2.5 Emissions

Emission Unit	Hourly Pellet Throughput ^a (lbs/hr)	Annual Pellet Throughput (tons/yr)	Emission Factor ^c (lb/ton)	Fabric Filter Control Efficiency (%)	Hourly Emissions (lbs/hr)	Annual Emissions (tons/yr)
Tile Line Pellet Receiver Tank 1 (TE1-RTD1)	45000	56940	0.0020	99.0	0.0005	0.0006
Tile Line Pellet Receiver Tank 2 (TE1-RTD2)	45000	56940	0.0020	99.0	0.0005	0.0006
Pellet 4 Storage Silo (Pellet 4)	45000	56940	0.0020	99.0	0.0005	0.0006
Pellet 5 Storage Silo (Pellet 5)	45000	56940	0.0020	99.0	0.0005	0.0006
Pellet 6 Storage Silo (Pellet 6)	45000	56940	0.0020	99.0	0.0005	0.0006
Tile Line Pellet Receiver Tank 3 (TE1-RTD3)	7000	30660	0.0020	99.0	0.0001	0.0003
Tile Line Pellet Receiver Tank 4 (TE1-RTD4)	10000	43800	0.0020	99.0	0.0001	0.0004
Tile Line Pellet Feed Hopper 1 (TE1-HOP1)	7000	30660	0.0020	99.0	0.0001	0.0003
Tile Line Pellet Feed Hopper 2 (TE1-HOP2)	10000	43800	0.0020	99.0	0.0001	0.0004
Trial Pellet Receiver Tank 1 (TE1-T1)	3000	13140	0.0020	99.0	0.00003	0.0001
Trial Pellet Receiver Tank 2 (TE1-T2)	6000	26280	0.0020	99.0	0.0001	0.0003
Total					0.003	0.005

Notes:

a - Hourly pellet throughput for all emission units are conservatively assumed to be equivalent to the rated capacity of the emission unit.

b - PM-10 and PM-2.5 emissions are assumed equal to PM emissions as a conservative estimate.

c - Based on the study from the October 1997 Journal of the Air & Waste Management Association titled "Development of Emission Factors for Ethylene-Vinyl Acetate and Ethylene-Methyl Acrylate Copolymer Processing"

Attachment C



AIR-VRO-059-15

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY VALLEY REGIONAL OFFICE

4411 Early Road, P.O. Box 3000, Harrisonburg, Virginia 22801
(540) 574-7800 Fax (540) 574-7878
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

April 28, 2015

Amy Thatcher Owens
Regional Director

Responsible Official
Mohawk Industries, Inc.
404 Anderson Street
Glasgow, Virginia 24555-2801

Re: Permanently shutdown equipment at Mohawk Industries, 404 Anderson Street, Glasgow, Virginia.
Registration No. 80269, Plant ID No. 51-015-00016

Dear Responsible Official:

The Department of Environmental Quality (DEQ) is joining you in a mutual determination, pursuant to 9 VAC 5-80-1105 A.1.d and 9 VAC 5-20-220 of Virginia's Regulations for the Control and Abatement of Air Pollution, regarding the shutting down of the referenced equipment. The Regulations provide that the DEQ and the owner of a source may make a "mutual determination that a stationary source or emissions unit is shutdown permanently." The Regulations also require that, upon making a final decision that the source is permanently shutdown, the DEQ revoke all applicable permits. This mutual determination must be signed by a "responsible company official."

In execution of this mutual determination of permanent shutdown, Mohawk Industries, Inc. agrees that:

1. A mutual and final determination has been made that the below referenced equipment is permanently shutdown.

Reference Number	Emission Unit Description	Size/ Rated Capacity	Permit Date
YD1	#1 Ilma Line	3,900 lbs yarn/hr	8/1/07, as Amended 8/7/2013
YD2	#2 Ilma Line	1.85 tons of dyeing solution per 1.54 tons of fabric per hour	9/4/07

Shutdown
equip
4/28/15
Ceds

YD3	Ilma Sample Line (1992)	300 lbs yarn/hr	7/10/86 as Amended 6/29/06, 8/6/07
YD4	Lanly Dryer	600 lbs yarn/hr	7/10/86 as Amended 6/29/06, 8/6/07
YD5	Pack Kettles (Total of 8) (1952)	2,500 lbs/hr (total)	7/10/86 as Amended 6/29/06, 8/6/07
HMS	Hot Melt Sample Line	1,333 yd ² /hr	8/12/02 as amended 6/29/06

2. Mohawk Industries, LLC is the sole "owner," as defined in the Regulations, of the referenced equipment.
3. The DEQ will remove the referenced equipment from the air emission inventory and will consider its air pollutant emissions to be zero in any future air quality analysis.
4. The permits dated August 1, 2007 as amended August 7, 2013 (#1 Ilma dye line YD1); September 4, 2007 (YD2); August 12, 2002 as amended June 29, 2006 (hot melt sample line); July 10, 1986, as amended June 29, 2006, August 6, 2007 (batch yarn dyeing operations: YD3, YD4 and YD5) for the referenced equipment are revoked.
5. Upon signature of this document by the Department and by Mohawk Industries, Inc. the referenced equipment shall cease operations. No future operations shall occur until the owner has obtained a permit pursuant to applicable provision of 9 VAC 5 Chapter 80 in the Regulations. Any use of the facility after execution of this document shall be considered equivalent to construction and operation of a new emissions unit and may subject Mohawk Industries, Inc. to the requirement to obtain a permit pursuant to applicable provision of 9 VAC 5 Chapter 80 in the Regulations.
6. The permanent shutdown of the referenced equipment will become effective upon signature of this document by both parties.
7. The permanent shutdown of the referenced equipment is binding upon Mohawk Industries, Inc. its successors in interest, designees, and assigns, jointly and severally.

By authorized signature below, and in accordance with the Virginia Regulations for the Control and Abatement of Air Pollution the Mohawk Industries, Inc. and the Department of Environmental Quality, acting on behalf of the State Air Pollution Control Board, mutually determine that the referenced equipment is shutdown permanently.

Date: 4/28/15

Tamara R. Paday
Air Permit Manager, Valley Regional Office

The terms and conditions of this determination are accepted by Mohawk Industries, Inc.

Date: 4-27-15

[Signature]
Signature of Responsible Official

Plant Manager
Title of Responsible Official

State of Virginia
City/County of Rockbridge

The foregoing instrument was acknowledged before me this 4-27-15 by
(Date)

Todd Shail
(Printed Name of Responsible Official) of Mohawk Industries, Inc.

4-27-15
(Date)

M. Margaret A. Byers
(Notary Public)

My commission expires: 5-31-2018
(Date)

c: Air General Correspondence File

